DAG Travesal Path

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# Summary

This project demonstrates, traversing Directed Acyclic Graph and finding all the paths.

# Technology

Software Language: Swift 3.0

IDE : Xcode

Tool : Xcode Playground

# Classes & Protocols

## Vertex - Class

This class is used to create a node.

**Properties** :

Key: Name of the node

Edge Array: List of Edge connected to a node

## Edge - Class

This class creates an Edge

**Properties**:

Vertex: Connected node

GraphDelegate – (Protocol)

Interface having following function :

func addVertex(key:String) -> Vertex

func addEdge(source:Vertex, neighbor:Vertex)

func sort()

## Graph

## Graph implements Graph delegate protocol. This class is used to create a graph and then display a sorted path.

### Structure

### Stack: Created a structure named Stack to implement stack data structure. This structure is used to push and pop the nodes in the sort logic.

# Logic

Sorted path are determined using the following logic

1. Add nodes to a graph
2. Add edge to a graph
3. Find the nodes that do not have any input point and push it on to the stack
4. Remove the nodes that do not have input point and delete the edge that has that respective node
5. Repeat the process till all the nodes are removed in a recursive function named **sort**